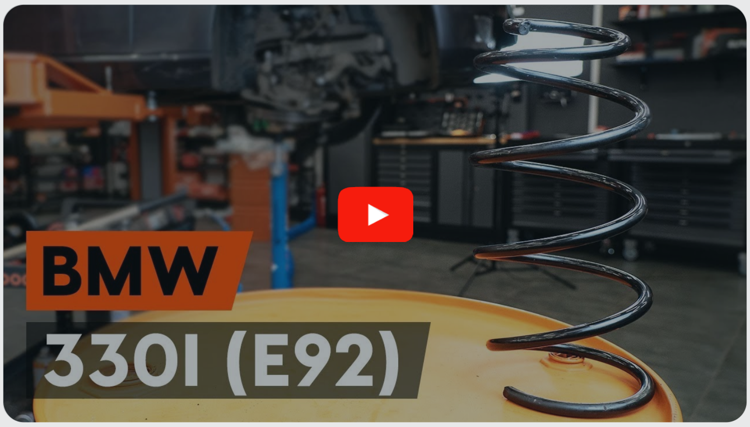
AUTODOC CLUB

How to change front coil springs on **BMW E92** – replacement guide

VIDEO TUTORIAL



Important!

This replacement procedure can be used for:
BMW 3 Saloon (E90) 318d 2.0, BMW 3 Coupe (E92) 318i 2.0, BMW 3 Saloon (E90) 320i 2.0, BMW 3 Saloon (E90) 325i 2.5, BMW 3 Saloon (E90) 330i 3.0, BMW 3 Saloon (E90) 320d 2.0, BMW 3 Saloon (E90) 318i 2.0, BMW 3 Saloon (E90) 330d 3.0, BMW 3 Saloon (E90) 320si 2.0, BMW 3 Saloon (E90) 335i 3.0, BMW 3 Saloon (E90) 335d 3.0, BMW 3 Coupe (E92) 325i 2.5, BMW 3 Coupe (E92) 330d 3.0, BMW 3 Coupe (E92) 325xi 2.5, BMW 3 Saloon (E90) 325d 3.0, (+ 16)

The steps may slightly vary depending on the car design.

REPLACEMENT: COIL SPRINGS – BMW E92. TOOLS YOU MIGHT NEED:



- Wire brush
- WD-40 spray
- Brake cleaner
- Copper grease
- Combination spanner #18
- Combination spanner #21
- Torx bit T30
- HEX bit No.H6
- Drive socket # 13
- Drive socket # 17
- Drive socket # 18
- Drive socket # 21
- Wheel impact socket #17
- Shock absorber socket
- Ratchet wrench
- Torque wrench
- Pin punch
- Tap wrench
- Hammer
- Crow bar
- Hydraulic strut spring compressor
- Hydraulic transmission jack
- Fender cover
- Wheel chock

BUY TOOLS

Replacement: coil springs – BMW E92. Professionals recommend:

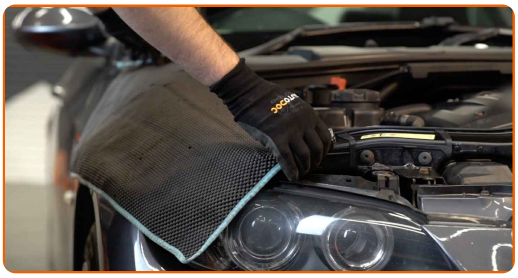
- Both coil springs of the front suspension should be replaced simultaneously.
- The replacement procedure is identical for the left and right coil springs of the front suspension.
- Warning! Shut down the engine before starting any work – BMW E92.

CARRY OUT REPLACEMENT IN THE FOLLOWING ORDER:

1 Open the bonnet.



2 Use a fender protection cover to prevent damaging paintwork and plastic parts of the car.



3 Clean the fasteners of the shock strut upper mount. Use a wire brush. Use WD-40 spray.

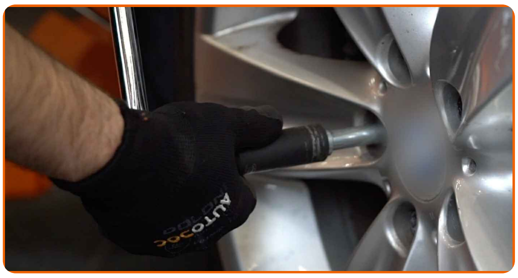


4 Loosen the upper fastener of the shock strut mount. Use a drive socket #13. Use a ratchet wrench.

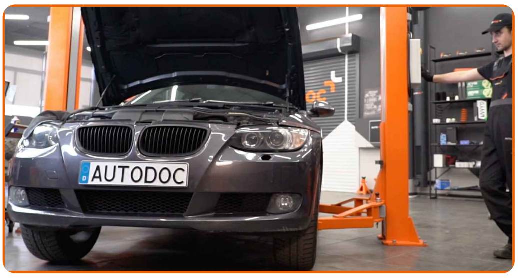


5 Secure the wheels with chocks.

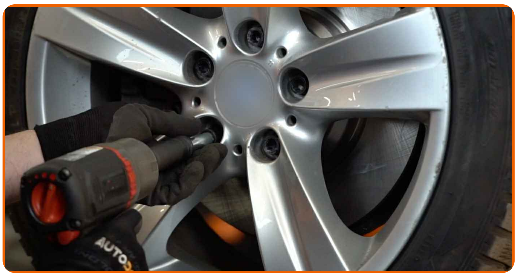
6 Loosen the wheel mounting bolts. Use wheel impact socket #17.



7 Raise the front of the car and secure on supports.



8 Unscrew the wheel bolts.



AUTODOC recommends:

- Important! Hold the wheel while unscrewing the fastening bolts. BMW E92

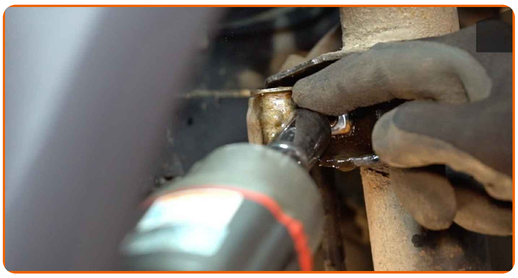
9 Remove the wheel.



10 Clean the stabiliser link fasteners. Use a wire brush. Use WD-40 spray.

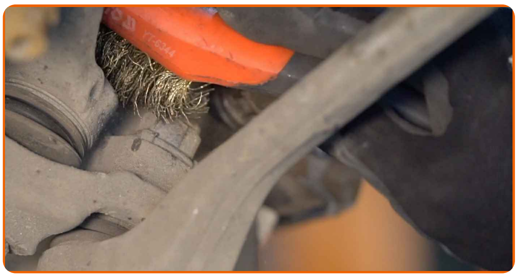


11 Unscrew the nut and remove the stabilizer rod from the shock strut. Use a drive socket #17.



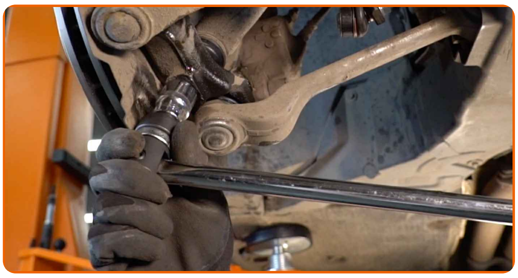
12

Clean the fastener connecting the ball joint to the steering knuckle. Use a wire brush. Use WD-40 spray.



13

Unscrew the fastener connecting the ball joint of the front control arm to the steering knuckle. Use a drive socket #21. Use a tap wrench.



14

Unscrew the end fastening nut to the steering knuckle. Use a combination spanner #18. Use Torx T30. Use a ratchet wrench.



15

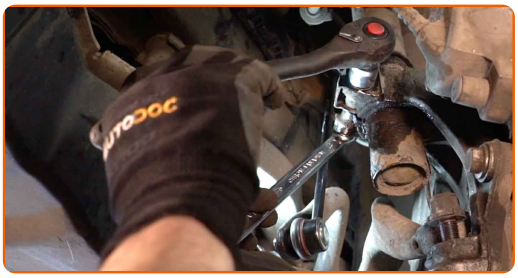
Unscrew the fastener connecting the ball joint of the rear control arm to the steering knuckle. Use a combination spanner #21. Use Torx T30. Use a ratchet wrench.



16 Clean the fasteners connecting the shock strut to the steering knuckle. Use a wire brush. Use WD-40 spray.



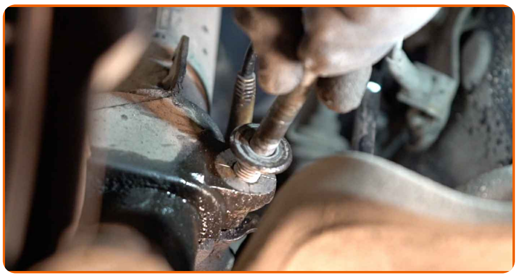
17 Unscrew the lower fastener connecting the shock strut to the steering knuckle. Use a combination spanner #18. Use a drive socket #18. Use a ratchet wrench.



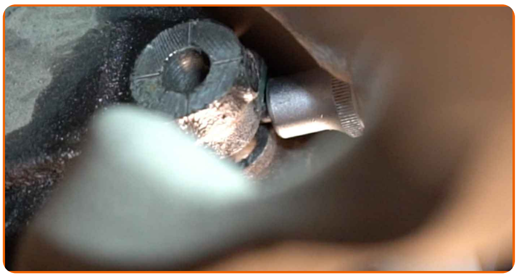
18 Prop up the steering knuckle. Use a hydraulic transmission jack.



19 Remove the fastening bolt.



20 Release the lower fastener connecting the shock strut to the steering knuckle. Use a special drive socket to remove the shock absorber.



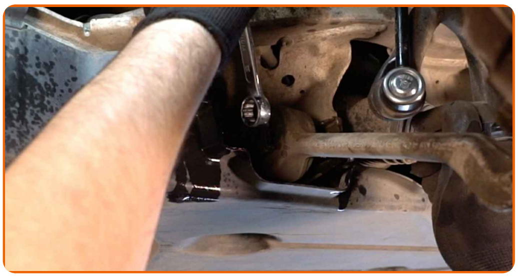
21 Disconnect the tie rod end from the steering knuckle.



22 Clean all joints of the arm. Use a wire brush. Use WD-40 spray.



23 Unscrew the rear fastener connecting the control arm to the subframe. Use a combination spanner #18 (2 pieces).



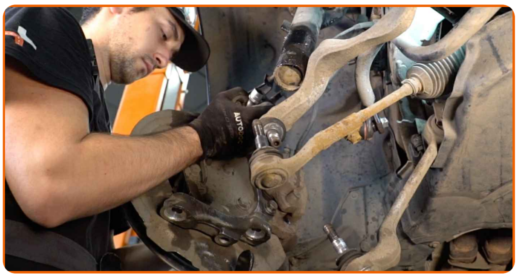
24

Detach the rear control arm from the steering knuckle. Detach the front control arm from the steering knuckle.



25

Disconnect the steering knuckle from the shock absorber strut. Use a pin punch. Use a hammer.

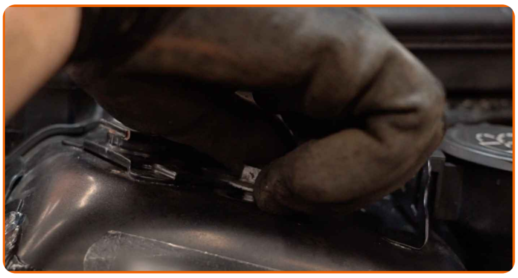


Replacement: coil springs – BMW E92. Tip from AUTODOC:

- Make sure that the steering knuckle is supported.

26

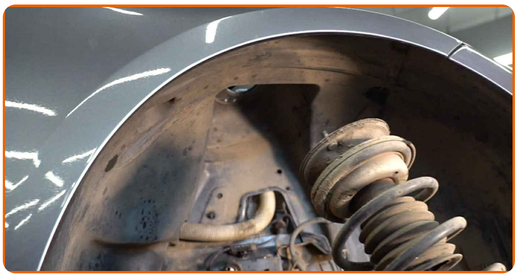
Unscrew the top fastening of the shock strut mount.



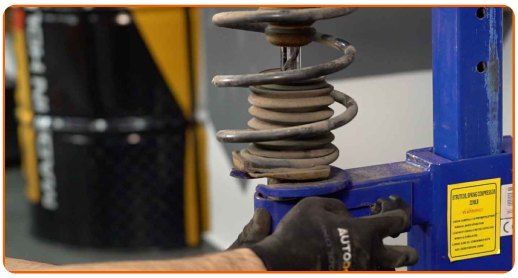
AUTODOC recommends:

- BMW E92 – To avoid injury, hold the suspension strut while unscrewing the fastening bolts.

27 Remove the suspension strut.



28 Set the shock absorber strut on the spring compressor tool.



Replacement: coil springs – BMW E92. AUTODOC experts recommend:

- Note that when using a spring compressor, spring coils need to be securely gripped, compressing the spring on the opposite sides.
- Ensure the correct position of the spring in the retainer.
- Make sure that the spring coils tightly entered the lock handles.

29 Compress the spring.



30 Remove the shock strut mount cap. Use a crowbar.



31 Treat the shock strut rod. Use a wire brush. Use WD-40 spray.



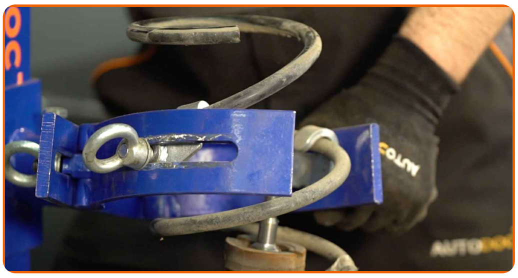
32 Remove the strut piston rod nut. Use a drive socket #21. Use HEX No.H6. Use a ratchet wrench.



33 Remove the top strut mount. Use a crowbar.



34 Release the coil spring.



35 Remove the spring.



36 Remove the shock absorber dust cap and the bump stop.



AUTODOC recommends:

- Replacement: coil springs – BMW E92. Carefully inspect the mount, the boot, and the bump stop of the shock absorber. Replace if necessary.

37 Install the boot and a bump stop onto the shock absorber.



38 Install the spring on the shock absorber.



39 Compress the spring.



40 Install the upper strut mount and the strut mount bearing.



41 Tighten the shock strut piston rod nut. Use a drive socket #21. Use HEX No.H6. Use a ratchet wrench. Use a torque wrench. Tighten it to 64 Nm torque.



Replacement: coil springs – BMW E92. AUTODOC recommends:

- Check to make sure the spring is positioned correctly. Avoid its misalignment.

42

Install the shock strut mount cap.



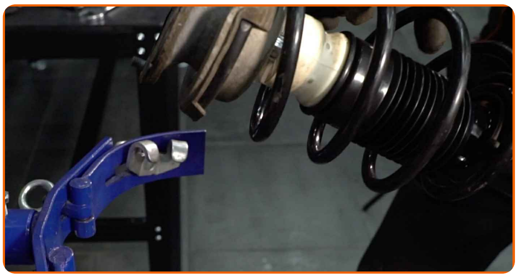
43

Decompress the spring.



44

Remove the assembled shock strut.



45

Install the shock strut into the wheel arch.



46

Screw the top fastening of the shock strut mount. Use a drive socket #13. Do not tighten it.



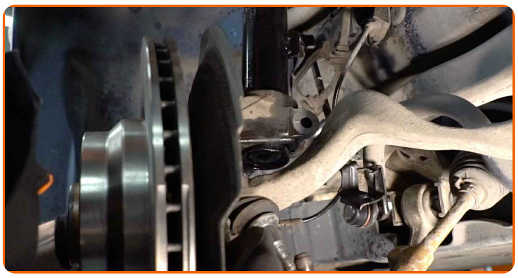
AUTODOC recommends:

- BMW E92 – To avoid injury, hold the suspension strut while screwing in the fastening bolts.

47 Treat the shock strut mounting seat on the steering knuckle. Use a wire brush. Use WD-40 spray.



48 Fix the shock absorber strut on the steering knuckle.



49 Raise the hydraulic transmission jack by 10-15 cm.



50 Install the fastening bolt.



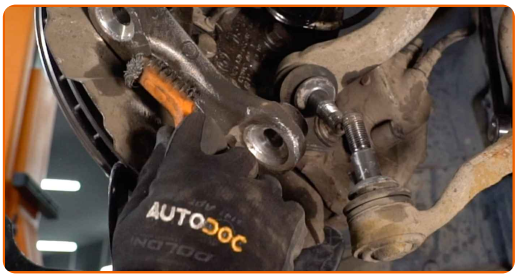
51

Screw in the fastener that connects the shock strut to the steering knuckle. Use a drive socket #18. Use a combination spanner #18.



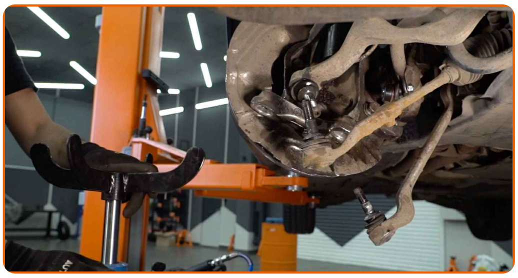
52

Clean the ball joint mounting seat. Use a wire brush. Use WD-40 spray.



53

Remove the support from under the steering knuckle.



AUTODOC recommends:

- BMW E92 – Do not lower the transmission jack sharply to avoid damaging components and mechanisms of the car.

54 Attach the front control arm to the steering knuckle. Attach the rear control arm to the steering knuckle.



55 Connect the tie rod end to the steering knuckle.

56 Screw in the fastener connecting the ball joint of the rear control arm to the steering knuckle. Use a drive socket #21.



57 Screw in the fastener connecting the ball joint of the front control arm to the steering knuckle. Use a drive socket #21.



58 Screw on the fastening nut that connects the tie rod end to the steering knuckle. Use a drive socket #18.



59

Tighten the ball joint fastener. Use a drive socket #21. Use a torque wrench. Tighten it to 175 Nm torque.



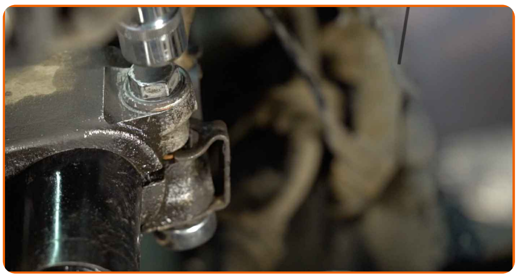
60

Tighten the fastening nut connecting the tie rod end to the steering knuckle. Use a drive socket #18. Use a torque wrench. Tighten it to 80 Nm torque.



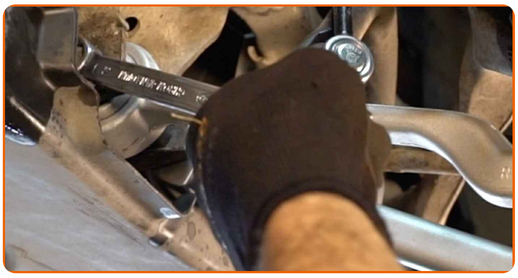
61

Tighten the lower fasteners connecting the shock strut to the steering knuckle. Use a drive socket #18. Use a torque wrench. Tighten it to 81 Nm torque.



62

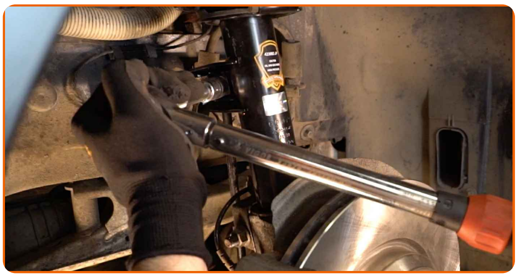
Screw the rear fastener connecting the control arm to the subframe. Use a combination spanner #18. Use a torque wrench. Tighten it to 68 Nm torque.+90°



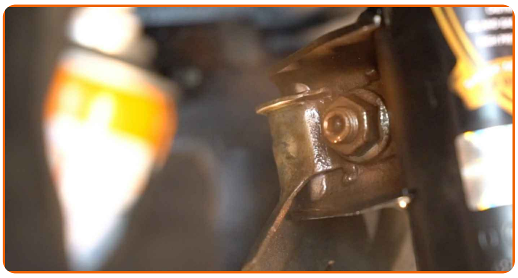
AUTODOC recommends:

- Important! Be sure to use new fasteners.

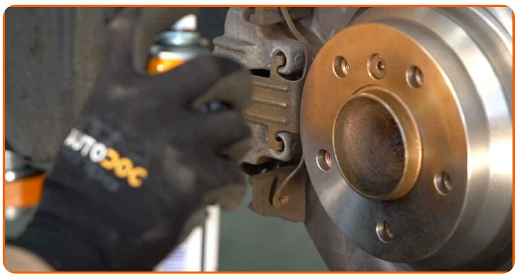
63 Secure the stabilizer link on the suspension strut. Use a drive socket #17. Use a torque wrench. Tighten it to 58 Nm torque.



64 Treat the shock strut fasteners. Use copper grease.



65 Treat the surface where the brake disc contacts the wheel rim. Use copper grease.



66 Clean the brake disk surface. Use a brake cleaner.



AUTODOC recommends:

- Replacement: coil springs – BMW E92. After applying the spray, wait a few minutes.

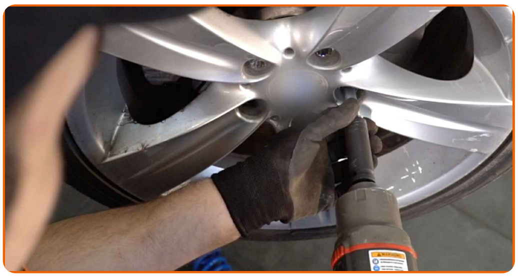
67 Install the wheel.



AUTODOC recommends:

- Important! Hold the wheel while screwing in the fastening bolts. BMW E92

68 Screw in the wheel bolts. Use wheel impact socket #17.



69 Lower the car and working in a cross order, tighten the wheel bolts. Use wheel impact socket #17. Use a torque wrench. Tighten it to 120 Nm torque.



70 Tighten the upper fastener of the shock absorber strut mount. Use a drive socket #13. Use a torque wrench. Tighten it to 34 Nm torque.



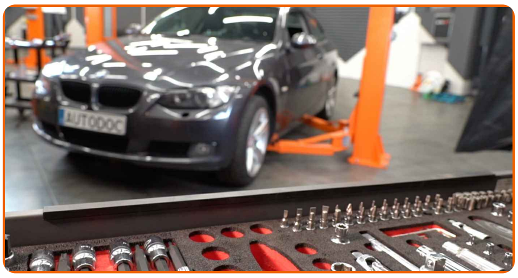
71 Remove the jacks and chocks.



72 Remove the fender protection cover.



73 Close the hood.



WELL DONE!

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